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THE DISCORDANT RELATIONSHIP BETWEEN FRACTIONAL FLOW RESERVE AND CORONARY FLOW RESERVE IS NOT EXPLAINED BY DIFFERENCES IN MICROVASCULAR OR RESIDUAL CULPRIT EPICARDIAL CORONARY DISEASE

Poster Contributions
Poster Sessions, Expo North
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Background: The discordant relationship between fractional flow reserve (FFR) and coronary flow reserve (CFR) is incompletely understood. We performed a study to assess the contributions of microcirculatory disease and residual epicardial disease to this relationship.

Methods: Consecutive patients undergoing PCI for stable angina and stabilized NSTEMI with single vessel disease were included in the study. FFR, index of microcirculatory resistance (IMR) and CFR were measured using a pressure wire pre and post PCI. A CFR value ≤2.0 and an FFR ≤0.8 were used as thresholds for ischaemia.

Results: 84 patients (mean±SD) age 60.5±11.3 years, 78% male, 35% NSTEMI were included. CFR and FFR were correlated (r=0.48, p=0.001) [Figure 1]. There was no difference in coronary physiological parameters (IMR, CFR and FFR) between NSTEMI and SA. In 70.2% of cases CFR and FFR were concordant. Using FFR as a gold standard the PPV and NPV for CFR was 87% and 39% respectively. There was no significant difference in IMR or post PCI FFR comparing patients with a FFR>0.8 and CFR≤2.0 and >2.0. In patients with an FFR ≤0.8 but a CFR >2.0 and CFR≤2.0, there was also no significant differences (Figure 1). Although linear regression demonstrated that FFR pre PCI predicted CFR (p<0.0001) the model had limited power (r2 0.29) suggesting other factors are important in determining CFR.

Conclusion: The discordant relationship between CFR and FFR is not explained by differences in microvascular disease or residual culprit epicardial disease.